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Total Number of Pages in This Submission

Application Number	10/763,885
Filing Date	January 23, 2004
First Named Inventor	Frank Y. Xu
Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	P113-55-03

ENCLOSURES (Check all that apply)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Xu et al.

PATENT APPLICATION

Serial No.: 10/763,885

Group Art Unit: Unassigned

Filing Date: January 23, 2004

Examiner: Unassigned

For: MATERIALS AND METHODS FOR IMPRINT LITHOGRAPHY.

INFORMATION DISCLOSURE STATEMENT

Commissioner
for Patents
Alexandria, VA 22313-1450

Sir:

The following information is submitted in compliance with Applicants' duty of disclosure under 37 C.F.R. §1.56. No item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. §1.56 more than three (3) months prior to the filing of this information disclosure statement. Form PTO-1449 and the requisite copies of each reference recited below accompany this document. It is respectfully requested that the cited information be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

ISSUED PATENTS

<u>Patent Number</u>	<u>Inventor</u>	<u>Grant Date</u>
4,724,222	Feldman	02/09/1988
4,731,155	Napoli et al.	03/15/1988
5,425,848	Haisma et al.	06/20/1995
5,669,303	Maracas et al.	09/23/1997
5,772,905	Chou	06/30/1998
5,900,160	Whitesides et al.	05/04/1999
5,948,470	Harrison et al.	09/07/1999
6,039,897	Lochhead et al.	03/21/2000
6,309,580	Chou	10/30/2001
6,334,960	Willson et al.	01/01/2002

6,518,168	Clem et al.	02/11/2003
6,696,220	Bailey et al.	02/24/2004

OTHER PATENT DOCUMENTS

09/698,317	Choi et al.	10/27/2000
10/293,224	Choi et al.	11/13/2002
10/293,919	Voisin	11/13/2002
10/316,963	Choi et al.	12/11/2002
10/614,716	Choi et al.	07/07/2003
10/735,110	Nimmakayala et al.	12/12/2003
10/780,821	Sreenivasan et al.	01/20/2004
10/760,821	Sreenivasan et al.	01/20/2004
10/788,700	Sreenivasan	02/27/2004

U.S. PATENT APPLICATION PUBLICATIONS

<u>Publication Number</u>	<u>Inventor</u>	<u>Publication Date</u>
US 2002/0098426	Sreenivasan et al.	07/25/2002
US 2002/0094496	Choi et al.	07/18/2002
US 2003/0093122	Choi et al.	07/18/2002
US 2003/0205657	Voisin	11/06/2003
US 2004/0008334	Sreenivasan et al.	01/15/2004

FOREIGN PATENT DOCUMENTS

<u>Document No.</u>	<u>Inventor</u>	<u>Pub. Date</u>
DE 2800476	Lamprecht et al.	07-13-1978
JP 1-196749	Matsumoto et al.	08-08-1989
WO 01/69317	Montelius et al.	09-20-2001
WO 01/79592	Hallberg et al.	10-25-2001
WO 01/90816	Heidari	11-29-2001

NON-PATENT DOCUMENTS

Krug, Herbert et al. "Fine Patterning of Thin Sol-Gel Films," *Journal of Non-Crystalline Solids*, pp. 447-450, 1992.

Krauss, et al. "Fabrication of Nanodevices Using Sub-25nm Imprint Lithography," *Appl. Phys. Lett.*, 67(21), pp. 3114-3116, 1995.

Chou et al. "Imprint of Sub-25 nm Vias and Trenches in Polymers," *Applied Physics Letters*, 67(21), pp. 3114-3116, 1995.

Chou et al. "Imprint Lithography with 25-Nanometer Resolution," *Science*, vol. 272, pp. 85-87, Apr. 5, 1996.

Haisma, J. et al. "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication," *Journal of Vacuum Science and Technology*, vol. 14, pp. 4124-4128, 1996.

Chou et al. "Imprint Lithography with Sub-10 nm Feature Size and High Throughput", *Microelectronic Engineering* 35, pp. 237-240, 1997.

Feldman et al., "Wafer Chuck For Magnification Correction in X-Ray Lithography," *American Vacuum Society*, pp. 3476-3479, 1998.

Scheer, H.C. et al. "Problems of Nanoimprinting Technique for Nanometer Scale Pattern Definition," *Journal of Vacuum Science and Technology*, vol. 16, pp. 3917-3921, 1998.

Colburn, M. et al. "Step and Flash Imprint Lithography: New Approach to High-Resolution Patterning," *Proc. of SPIE*, vol. 3676, pp. 379-389, 1999.

Chou, Stephen et al. "Lithographically-induced Self Assembly of Periodic Micropillar Arrays," *Journal of Vacuum Science and Technology*, vol. 17, pp. 3197-3202, 1999.



Ruchhoeft, P. et al. "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography," *Journal of Vacuum Science and Technology*, vol. 17, pp. 2965-2982, 1999.

Choi, B.J. et al. "Design of Orientation Stages for Step and Flash Imprint Lithography," *Precision Engineering*, vol. 25, pp. 192-199, 2001.

Otto et al., "Step and Repeat UV-Nanoimprint Lithography: Material Issues," *Nanoimprint and Nanoprint Technology Conference*, San Francisco, December 11-13, 2002

Johnson et al., "Advances in Step and Flash Imprint Lithography," *SPIE Microlithography Conference*, February 23-28, 2003.

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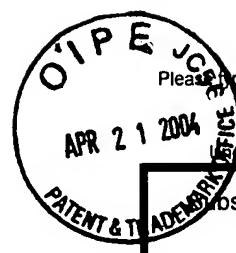
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Respectfully,

Kenneth C. Brooks
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	10/763,885
Filing Date	01/23/2004
First Named Inventor	Xu et al.
Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	P113/MII-79-61-03

U.S. PATENT DOCUMENTS

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Application Number	10/763,885
Filing Date	01/23/2004
First Named Inventor	Xu et al.
Group Art Unit	Unassigned
Examiner Name	Unassigned

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Application Number	10/763,885
Filing Date	01/23/2004
First Named Inventor	Xu et al.
Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	P113/MII-79-61-03

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Examiner Initials*	Cite, No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	A18	KRUG et al., "Fine Patterning of Thin Sol-Gel Films," Journal of Non-Crystalline Solids, 1992, pp. 447-450, vol. 147 & 148.	
	A19	Krauss et al., "Fabrication of Nanodevices Using Sub-25nm Imprint Lithography," Appl. Phys. Lett 67(21), 3114-3116, 1995	
	A20	CHOU et al., "Imprint of Sub-25 nm Vias and Trenches in Polymers," Applied Physics Letters, November 20, 1995, pp. 3114-3116, vol. 67(21).	
	A21	CHOU et al., "Imprint Lithography with 25-Nanometer Resolution," Science, Apr. 5, 1996, pp. 85-87, vol. 272.	
	A22	HAISMA et al., "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication," Journal of Vacuum Science and Technology, Nov/Dec 1996, pp. 4124-4128, vol. B 14(6).	
	A23	CHOU et al., "Imprint Lithography with Sub-10nm Feature Size and High Throughput," Microelectronic Engineering, 1997, pp. 237-240, vol. 35.	
	A24	FELDMAN et al., "Wafer chuck for manification correction in x-ray lithography," American Vacuum Society, 1998, pp. 3476-3479.	
	A25	SCHEER et al., "Problems of the Nanoimprinting Technique for Nanometer Scale Pattern Definition," Journal of Vacuum Science and Technology, Nov/Dec 1998, pp. 3917-3921, vol. B 16(6).	
	A26	COLBURN. et al., "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning", Proc. of SPIE, 1999, pp. 379-389, vol. 3676.	
	A27	CHOU et al., "Lithographically-Induced Self Assembly of Periodic Polymer Micropillar Arrays," Journal of Vacuum Science and Technology, Nov/Dec 1999, pp. 3197-3202, vol. B 17(6).	
	A28	RUCHHOEFT et al., "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography," Journal of Vacuum Science and Technology, 1999, pp. 2965-2982, vol. 17.	

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				First Named Inventor	Xu et al.
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	A29	CHOI et al., "Design of Orientation Stages for Step and Flash Imprint Lithography," Precision Engineering, Journal of the International Societies for Precision Engineering and Nanotechnology, 2001, pp. 192-199, vol. 25.	
	A30	CHOI et al., "High Precision Orientation Alignment and Gap Control Stages for Imprint Lithography Processes," U.S. Patent Application 09/698,317. Filed with USPTO on October 27, 2000.	
	A31	SREENIVASAN et al., "High-Resolution Overlay Alignment Methods and Systems for Imprint Lithography," U.S. Patent Application Publication 2002/0098426. Published on July 25, 2002.	
	A32	CHOI et al., "Method and System of Automatic Fluid Dispensing for Imprint Lithography Processes," U.S. Patent Application Publication 2002/0094496. Published on July 18, 2002.	
	A33	CHOI et al., "Methods for High-Precision Gap and Orientation Sensing Between a Transparent Template and Substrate for Imprint Lithography," U.S. Patent Application Publication 2003/0093122. Published on July 18, 2002.	
	A34	VOISIN, "Methods of Manufacturing a Lithography Template," U.S. Patent Application Publication 2003/0205657. Published on November 6, 2003.	
	A35	SREENIVASAN et al., "Step and Repeat Imprint Lithography Systems," U.S. Patent Application Publication 2004/0008334. Published on January 15, 2004.	
	A36	SREENIVASAN et al., "Step and Repeat Imprint Lithography Processes," U.S. Patent Application 10/194,991. Filed with USPTO July 11, 2002.	
	A37	OTTO M. et al., "Step and Repeat UV-Nanoimprint Lithography: Material Issues," Nanoimprint and Nanoprint Technology Conference, San Francisco, December 11-13, 2002.	
	A38	JOHNSON, et al., "Advances in Step and Flash Imprint Lithography," SPIE Microlithography Conference, February 23-28, 2003.	
	A39	CHOI et al., "A Chucking System and Method for Modulating Shapes of Substrates," U.S. Patent Application 10/293,224. Filed with USPTO on November 13, 2002.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/763,885
Sheet	5	of	5	Filing Date	01/23/2004
				First Named Inventor	Xu et al.
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
				Attorney Docket Number	P113/MII-79-61-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite ¹ No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T ²
	A40	VOISIN, "Methods of Inspecting A Lithography Template," U.S. Patent Application 10/293,919. Filed with USPTO on November 13, 2002		
	A41	CHOI et al., "A Method For Modulating Shapes of Substrates," U.S. Patent Application 10/316,963. Filed with USPTO on December 11, 2002.		
	A42	CHOI et al., "A Conforming Template For Patterning Liquids Disposed On Substrates," U.S. Patent Application 10/614,716. Filed with USPTO on July 7, 2003.		
	A43	NIMMAKAYALA et al., "Magnification Correction Employing Out-of-Plane Distortion of a Substrate," U.S. Patent Application 10/735,110. Filed with USPTO on December 12, 2003.		
	A44	SREENIVASAN et al., "Method For Concurrently Employing Differing Materials To Form A Layer On A Substrate," U.S. Patent Application 10/760,821. Filed with USPTO January 20, 2004.		
	A45	SREENIVASAN, " Full-Wafer Or Large Area Imprinting With Multiple Separated Sub-Fields For High Throughput Lithography, " U.S. Patent Application 10/788,700. Filed with USPTO on February 27, 2004.		

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--------------------	-----------------

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